

**ABSTRACT OF THE DISCLOSURE**

Disclosed is an adaptive channel estimator for improving a performance of a general channel estimator in a mobile communication system, and a method for controlling the same. The adaptive channel estimator further detects a noise level of a channel and a channel speed, and implements an optimum noise elimination filter on the basis of the detected noise level and channel speed. A comparison between mapping degrees predetermined by the detected noise level and channel speed allows an optimum noise elimination filter to be implemented, If such a channel estimator is implemented, then optimum packet data transmission is available for not only a low-speed channel but also a high-speed channel. A channel compensation caused by a difference between a spreading factor (SF) of a pilot channel and a spreading factor (SF) of a data channel can be compensated on the condition that a slope compensator executed by a SF ratio is controlled by a filter coefficient controller.